

Boring/Well ID:	MMW-P-11D								
CLIENT: AIMCO	FIELD SCIENTIST: Sarah Webb, L. P. G.								
PROJECT LOCATION: Indianapolis, Indiana	DATE BEGAN: 8/31/11								
PROJECT NAME: Michigan Meadows Apts	DATE FINISHED: 8/31/11								
PROJECT NUMBER: M01046	DRILLING METHOD: Direct Push								
DRILLING CONTRACTOR: Earth Exploration	DRILLING EQUIPMENT: Geoprobe 6620								
DRILLER: Doug Carlson	GW DEPTH (OBSERVED): 24.0 ft								
BORING LOCATION: SW of Michigan Plaza	SURFACE ELEVATION: NS								
	SHEET 1 OF 2								

										SHEET 1 OF 2
Depth BGS (ft)	USCS Symbol	USCS Graphic	Lithologic Description	Stratum Depth (ft)	TPV (ppm)	Recovery %	Sample Location	Sample ID	MMV	/-P-11D
0-			Grass/Topsoil	105						2" Dia. Borehole
1-			SILTY SAND with trace gravel, brown (10YR 5/3), dense, dry	0.5	0.6					
2-						75				
3-	SM				-					
4-					0.6					
					-					
5-			SAND with some gravel, Well Graded, brown (10YR 5/3), loose, dry	5.0	0.7					
6-			(a. 6), 16666, (a. y		0.5	75				
7-			No Decovery 7 to 9 th							
8-			No Recovery 7 to 8 ft		-					
9-					0.6					
10-						75				
11-	SW				0.3					—Bentonite Seal
	SW		No Recovery 11 to12 ft		-				_	—2" PVC Riser
12-			Moist below 12 ft		0.4		-			2 1 70 11.001
13-					0.4					
14-			Yellowish red (5YR 5/8) oxidation 13 to 15 ft		0.4	75				
15-					-					
16-			No Recovery 15 to 16 ft							
17-		0.70.70.		17.0	0.6		*	Soil Sample SBP11D:160170		
			Fine grained SILTY SAND with trace gravel, brown (10YR 5/3), moist			7.				
18-	SM				0.7	75				
19-			No Recovery 19 to 20 ft		_					
20-							J			

BGS = Below Ground Surface

USCS = Unified Soil Classification System

TPV = Total Photoionizable Vapors



Boring/Well ID:	MMW-P-11D								
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PROJECT NUMBER: M01046	DRILLING METHOD: Direct Push								
DRILLING CONTRACTOR: Earth Exploration	DRILLING EQUIPMENT: Geoprobe 6620								
DRILLER: Doug Carlson	GW DEPTH (OBSERVED): 24.0 ft								
BORING LOCATION: SW of Michigan Plaza	SURFACE ELEVATION: NS								
_	SHEET 2 OF 2								

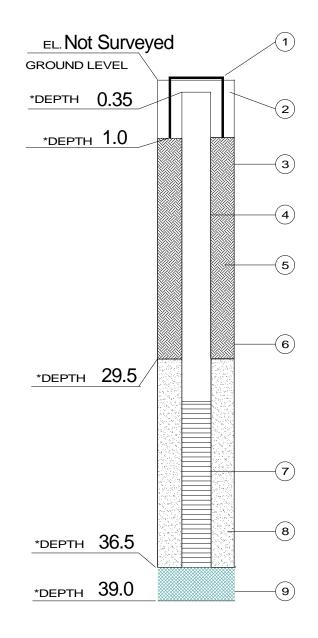
SHEET 2						SHEET 2 OF 2			
Depth BGS (ft)	USCS Symbol	USCS Graphic	Lithologic Description	Stratum Depth (ft)	TPV (ppm)	Recovery %	Sample Location	Sample ID	MMW-P-11D
20 — 21 — 22 — 23 — 24 — 25 — 26 — 27 — 27 — 27 — 27 — 27 — 27 — 27	SW		SAND with trace gravel, Well Graded, brown (10YR 5/3), dense Fine to medium SAND 21 to 21.5 ft Medium to coarse SAND with trace gravel 21.5 to 23 ft No Recovery 23 to 24 ft Coarse SAND and GRAVEL, grayish brown (10YR 5/2), dense, wet	- 24.0	0.8	38			_ ▼ —Bentonite Seal
28 — 29 — 30 —	SW-GW		Fine to coarse SAND 28 to 29 ft	30.5	0.7	83	*	Water Sample SBP11D:290	—2" PVC Riser
32- 33- 34- 35-	SW		Medium to coarse SAND with trace gravel, dense, wet No Recovery 31.5 to 32 ft		1.3	75			—Sand Pack
36 – 37 –			No recovery 35 to 36 ft SILTY CLAY, gray (2.5Y 5/1), moist	36.5	0.6		*	0.10	Screen (2" Slotted PVC)
38 – 39 –	CL		Becomes hard and dry at 39 ft End of boring at 39 ft	39.0	0.6	75	*	Soil Sample SBP11D:370390 Water Sample SBP11D:390	
40 —			End of boiling at 00 it						

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WELL CONSTRUCTION DIAGRAM WELL NO. MMW-P-11D



*DEPTH IN FEET BELOW GROUND LEVEL

GEOLOGIST/FIELD SCIENTIST Sarah Webb, L.P.G.

- $8.0_{\rm INCHES}$ PROTECTIVE CASING I.D.
- SURFACE SEAL TYPE Concrete Cement
- 2.0 BOREHOLE DIAMETER
- RISER PIPE:

a. Type _	Schedule 40 F	7 VC
b. I.D	2.0	_INCHES
c. Length	31.5	_FEET

- Flush Threaded d. Joint Type __
- 5. BACKFILL:

Crushed Bentonite a. Type Poured b. Installation

- **Grout Barrier** 6. TYPE OF SEAL
- SCREEN:

Schedule 40 PVC a. Type

INCHES b. I.D.

0.01 c. Slot Size **INCHES**

5.0 d. Length **FEET**

- #4 Sand 8. SCREEN FILTER TYPE
- BACKFILL TYPE Natural Cave / Poured Sand

8/31/11 DATE COMPLETED

DEVELOPMENT METHOD Submersible Pump

Earth Exploration DRILLING CONTRACTOR

> **Doug Carlson** DRILLER

Geoprobe 6620 RIG TYPE _

WELL CONSTRUCTION DIAGRAM

Michigan Plaza / Michigan Apts. Indianapolis, Indiana

Project Number: M01046 Drawing File:

MWW-P-11D Construction Diagram Date Prepared:

12/15/11

Not to Scale Drn. By: ABW

Approved By: JAM



Indianapolis, Indiana 46219-6406



Boring/Well ID:	MMW-P-11S							
CLIENT: AIMCO	FIELD SCIENTIST: Sarah Webb, L. P. G.							
PROJECT LOCATION: Indianapolis, Indiana	DATE BEGAN: 8/31/11							
PROJECT NAME: Michigan Meadows Apts	DATE FINISHED: 8/31/11							
PROJECT NUMBER: M01046	DRILLING METHOD: Direct Push							
DRILLING CONTRACTOR: Earth Exploration	DRILLING EQUIPMENT: Geoprobe 6620							
DRILLER: Doug Carlson	GW DEPTH (OBSERVED): 24.0 ft							
BORING LOCATION: SW of Michigan Plaza	SURFACE ELEVATION: NS							
	SHEET 1 OF 1							

						SHEET 1 OF				
Depth BGS (ft)	USCS Symbol	USCS Graphic	Lithologic Description	Stratum Depth (ft)	TPV (ppm)	Recovery %	Sample Location	Sample ID	MMW-P-11S	
0-			0 7 1				1	1	1	
1-	SM		Grass/Topsoil	0.5	0.9					
2-			SILTY SAND with trace gravel, brown (10YR 5/3), \dense, dry	1.5		75				
3-	sw		SAND with trace gravel, Well Graded, brown (10YR	4	0.6					
4-	"		5/3), loose		-					
5-	SM		No Recovery 3 to 4 ft	4.5 5.0	0.8					
6-			SILTY SAND with trace gravel, brown (10YR 5/3), dense	1 5.0	1.2	75				
7-	sw-gw		SAND and GRAVEL, Well Graded, brown (10YR	4	1.2	/3				
			5/3), loose, moist		-					
8-			No Recovery 7 to 8 ft	8.0	1.1		1		—Bentonite Seal	
9-	1		SAND with some gravel, Well Graded, brown (10YR 5/3), loose, moist		T	l				
10-			Fine SAND seam with yellowish red (5YR 5/8)		1.5	75			- 2" PVC Riser	
11-			oxidation at 9.5 ft			İ			- Z FVC Risei	
12-			No Recovery 11 to 12 ft				1			
13-			Rock in shoe 12 to 16 ft, cuttings indicate fine to		-					
14-			medium SAND with trace gravel, brown (10YR 5/3)			0				
15—										
16-	SW				1.2					
17-			CII Turith group account at 17.5 and 10.5		1.2	-				
18-			SILT with gravel seams, moist at 17.5 and 18 ft		1.8	63				
19-			No Recovery 18.5 to 20 ft		_	1			Sand Pack	
20-			Medium to coarse SAND with trace gravel,							
21-			brownish gray (10YR 6/2), wet 20 to 23 ft		13.0					
22-			Coarse SAND and GRAVEL at 21 ft			75				
23-					2.5	1				
24-		0.0.0	No Recovery 23 to 24 ft	24.0	,				Screen	
25-			Fine to coarse SAND and GRAVEL, grayish brown		1.8				(2" Slotted PVC)	
26-			(10YR 5/2), dense, wet			38				
27-			No Recovery 25.5 to 28 ft		-					
	SW-GW									
29-] 344-344				1.5					
						25				
30-			No Recovery 29 to 32 ft		-	25				
31-				32.0	,					
32-		•	End of boring at 32 ft	•	•	•	•	•	•	

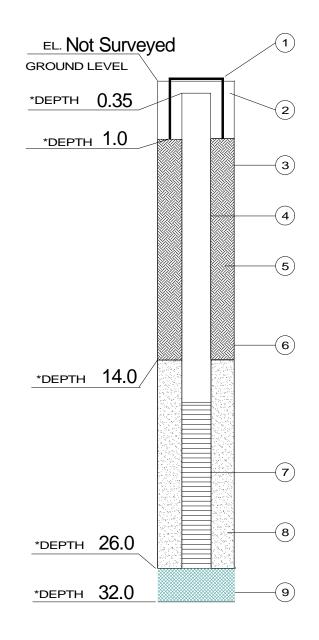
BGS = Below Ground Surface

USCS = Unified Soil Classification System

TPV = Total Photoionizable Vapors

WELL CONSTRUCTION DIAGRAM

WELL NO. MMW-P-11S



*DEPTH IN FEET BELOW GROUND LEVEL

GEOLOGIST/FIELD SCIENTIST
Sarah Webb, L.P.G.

- 1. PROTECTIVE CASING I.D. 8.0 INCHES
- 2. SURFACE SEAL TYPE Concrete Cement
- 3. BOREHOLE DIAMETER 2.0 INCHES
- 4. RISER PIPE:

a. Type _	Schedule 40 P	VC
b. I.D	2.0	INCHES
c. Length	16.0	FEET

0 ala aduda 40 DV/0

- d. Joint Type Flush Threaded
- 5. BACKFILL:
 - a. Type Crushed Bentonite
 - b. Installation Poured
- 6. TYPE OF SEAL Grout Barrier
- 7. SCREEN:
 - a. Type Schedule 40 PVC
 - b. I.D. <u>2.0</u> INCHES
 - c. Slot Size 0.01 INCHES
 - d. Length ______FEET
- 8. SCREEN FILTER TYPE #4 Sand
- 9. BACKFILL TYPE Natural Cave / Poured Sand

DATE COMPLETED 8/31/11

DEVELOPMENT METHOD Submersible Pump

DRILLING CONTRACTOR Earth Exploration

Doug Carlson

RIG TYPE
Geoprobe 6620

WELL CONSTRUCTION DIAGRAM

Michigan Plaza / Michigan Apts. Indianapolis, Indiana Project Number: M01046

Drawing File:
MWW-P-11S Construction Diagram

Date Prepared: 12/15/11

Scale: Not to Scale

Drn. By: Ckd. By: Approved By: JAM





Boring/Well ID:	MMW-P-12D						
CLIENT: AIMCO	FIELD SCIENTIST: Sarah Webb, L. P. G.						
PROJECT LOCATION: Indianapolis, Indiana	DATE BEGAN: 9/1/11						
PROJECT NAME: Michigan Meadows Apts	DATE FINISHED: 9/1/11						
PROJECT NUMBER: M01046	DRILLING METHOD: Direct Push						
DRILLING CONTRACTOR: Earth Exploration	DRILLING EQUIPMENT: Geoprobe 6620						
DRILLER: Doug Carlson	GW DEPTH (OBSERVED): 18.5 ft						
BORING LOCATION: NW of Michigan Plaza	SURFACE ELEVATION: NS						
	SHEET 1 OF 2						

Depth BGS (ft)	USCS Symbol	USCS Graphic	Lithologic Description	Stratum Depth (ft)	TPV (ppm)	Recovery %	Sample Location	Sample ID	MMW-P-12D
0-			Asphalt/Topsoil	0.5					2" Dia. Borehole
1-			SILTY SAND with trace gravel, dark brown (7.5YR 3/2), dense, dry		3.6				
2-					2.7	75			
3-	SM		No Possyony 2 to 4 ft						
4-			No Recovery 3 to 4 ft		-				
5-			SAND with some gravel, Well Graded, brown (10YR	5.0	7.0				
6-			5/3), loose, dry			75			
7-					3.7				
8-			No Recovery 7 to 8 ft		-				
9-					3.8				
10-	sw				4.8	63			
			Yellowish red (5YR 5/8) oxidation 10 to 10.5 ft			00			Dontonito Cool
11-			No Recovery 10.5 to 12 ft		-				— Bentonite Seal
12-									- —2" PVC Riser
13-					7.9				
14-	ML		SILT with trace sand, brown (10YR 5/3), loose, moist	14.0 14.5	11.0	75			
15-	SM		Fine SILTY SAND, brown (10YR 5/3) with yellowish		_				
16-			red (5YR 5/8) oxidation, loose, moist No Recovery 15 to 16 ft	16.0					
17-	SW		Fine to medium SAND with trace gravel, brown (10YR 5/3), dense		13.8		*	Soil Sample SBP12D:160180	
18-			Yellowish red (5YR 5/8) oxidation at 17.5 ft	46.5	46.1	75			
19-	SW-GW		SAND and GRAVEL, Well Graded, gray (2.5Y 5/1), dense, wet	18.5	12.1				
20-			No Recovery 19 to 20 ft	20.0	-				
21 —	SW		Fine to medium SAND with trace gravel, brownish gray (10YR 6/2), dense, wet		2.9	75			

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TPV = Total Photoionizable Vapors



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CLIENT: AIMCO	FIELD SCIENTIST: Sarah Webb, L. P. G.							
PROJECT LOCATION: Indianapolis, Indiana	DATE BEGAN: 9/1/11							
PROJECT NAME: Michigan Meadows Apts	DATE FINISHED: 9/1/11							
PROJECT NUMBER: M01046	DRILLING METHOD: Direct Push							
DRILLING CONTRACTOR: Earth Exploration	DRILLING EQUIPMENT: Geoprobe 6620							
DRILLER: Doug Carlson	GW DEPTH (OBSERVED): 18.5 ft							
BORING LOCATION: NW of Michigan Plaza	SURFACE ELEVATION: NS							
_	SHEET 2 OF 2							

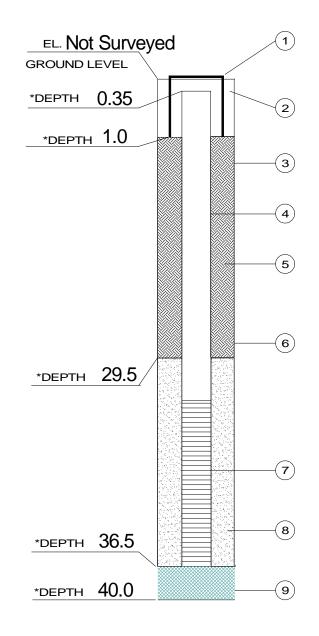
									SHEET 2 UF 2
Depth BGS (ft)	USCS Symbol	USCS Graphic	Lithologic Description	Stratum Depth (ft)	TPV (ppm)	Recovery %	Sample Location	Sample ID	MMW-P-12D
21 – 22 – 23 – 24 – 25 – 26 – 27 – 28 – 29 – 30 – 30 –	CL SW-GW		SILTY CLAY, brownish gray (10YR 6/2), hard, plastic, wet SAND and GRAVEL, Well Graded, brownish gray (10YR 6/2), wet Coarse SAND and GRAVEL, gray (2.5Y 5/1) 22.5 to 23 ft No Recovery 23 to 24 ft No Recovery 25 to 32 ft	21.0		75	*	Water Sample SBP12D:260	—Bentonite Seal - —2" PVC Riser
31 - 32 - 33 - 34 - 35 - 36 - 37 - 38 - 40 - 40 -	SW		Fine SAND, brown (10YR 5/3), dense, wet SILTY CLAY, gray (2.5Y 5/1), hard, dry No Recovery 37 to 40 ft End of boring at 40 ft	36.0 36.5 40.0	6.5	100	*	Water Sample SBP12D:360 Soil Sample SBP12D:360370	Screen (2" Slotted PVC)
41 -									

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WELL CONSTRUCTION DIAGRAM WELL NO. MMW-P-12D



*DEPTH IN FEET BELOW GROUND LEVEL

GEOLOGIST/FIELD SCIENTIST
Sarah Webb, L.P.G.

- 1. PROTECTIVE CASING I.D. 8.0 INCHES
- 2. SURFACE SEAL TYPE Concrete Cement
- B. BOREHOLE DIAMETER 2.0 INCHES
- 4. RISER PIPE:

а. Туре	Schedule 40	PVC
b. I.D	2.0	INCHES
c. Length _	31.5	FEET

- d. Joint Type Flush Threaded
- 5. BACKFILL:
 - a. Type Crushed Bentonite
 - b. Installation Poured
- 6. TYPE OF SEAL Grout Barrier
- 7. SCREEN:
 - a. Type Schedule 40 PVC
 - b. I.D. <u>2.0</u> INCHES
 - c. Slot Size <u>0.01</u> INCHES
 - d. Length 5.0 FEET
- 8. SCREEN FILTER TYPE #4 Sand
- 9. BACKFILL TYPE Natural Cave / Poured Sand

DATE COMPLETED _____9/1/11

DEVELOPMENT METHOD Submersible Pump

DRILLING CONTRACTOR Earth Exploration

Doug Carlson

RIG TYPE Geoprobe 6620

WELL CONSTRUCTION DIAGRAM

Michigan Plaza / Michigan Apts. Indianapolis, Indiana Project Number: M01046

Drawing File: MWW-P-12D Construction Diagram

Date Prepared: 12/15/11

Scale: Not to Scale

Drn. By: Ckd. By: Approved By: JAM





Boring/Well ID:	MMW-P-12S
CLIENT: AIMCO	FIELD SCIENTIST: Sarah Webb, L. P. G.
PROJECT LOCATION: Indianapolis, Indiana	DATE BEGAN: 9/1/11
PROJECT NAME: Michigan Meadows Apts	DATE FINISHED: 9/1/11
PROJECT NUMBER: M01046	DRILLING METHOD: Direct Push
DRILLING CONTRACTOR: Earth Exploration	DRILLING EQUIPMENT: Geoprobe 6620
DRILLER: Doug Carlson	GW DEPTH (OBSERVED): 20.0 ft
BORING LOCATION: NW of Michigan Plaza	SURFACE ELEVATION: NS
	SHEET 1 OF 1

						SHEET 1 OF 1				
Depth BGS (ft)	USCS Symbol	USCS Graphic	Lithologic Description	Stratum Depth (ft)	TPV (ppm)	Recovery %	Sample Location	Sample ID	MMW-	P-12S
0-			Asphalt	Τ.,		1	1	1		2" Dia. Borehole
1- 2- 3-	SM		SILTY SAND with trace gravel, brown (10YR 5/3), dense, dry	0.5	3.7 4.4	75				
4-			No Recovery 3 to 4 ft		-					
5- 6-			SAND with trace gravel, Well Graded, brown (10YR 5/3), loose	5.0	7.5 6.3	75				
7-			No Recovery 7 to 8 ft		-					
8- 9- 10-	SW		Some GRAVEL 8 to 11 ft		8.6	75	=			—Bentonite Seal —2" PVC Riser
11-			No Recovery 11 to 12 ft		_	1				
12- 13-	SM		SILTY SAND, Well Graded, brown (10YR 5/3),	12.0	13.2		1			
13— 14— 15— 16—			dense, dry SAND with some gravel, Well Graded, brown (10YR 5/3) with some yellowish red (5YR 5/8) oxidation, dense No Recovery 14 to 16 ft		-	- 50	-			
17-	SW		Fine to medium SAND, moist 16 to 18 ft		35.6					
18-						50				
19- 20-			No Recovery 18 to 20 ft	20.0	\					—Sand Pack
21-	SW-GW CL		SAND and GRAVEL, Well Graded, grayish brown (10YR 5/2), dense, wet Fine to medium SAND 20.5 to 21 ft	21.0 21.0 21.0	1,0	38				
23-	SW		SILTY CLAY, gray (2.5YR 5/1), hard, wet Fine to medium SAND with trace gravel, grayish]	-					Screen
24 — 25 —	GW		brown (10YR 5/2), dense, wet Medium to coarse SAND and GRAVEL seam at 21.5	24.		100				(2" Slotted PVC)
26-			No Recovery 22.5 to 24 ft	26.		100				
27-			Fine to coarse GRAVEL, brownish gray (10YR 6/2), dense, wet							
28-			SAND and GRAVEL 25.5 to 26 ft	_						
29-			End of boring at 26 ft							

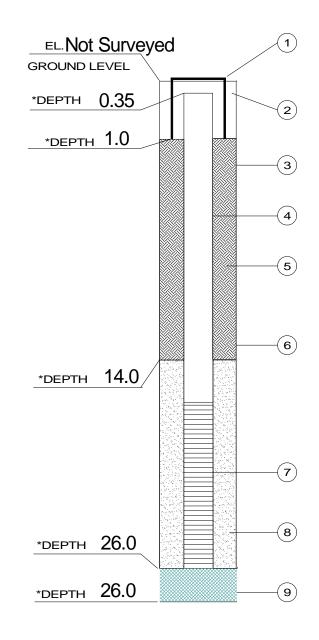
BGS = Below Ground Surface

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TPV = Total Photoionizable Vapors

WELL CONSTRUCTION DIAGRAM

WELL NO. MMW-P-12S



*DEPTH IN FEET BELOW GROUND LEVEL

GEOLOGIST/FIELD SCIENTIST Sarah Webb, L.P.G.

- $8.0_{\rm INCHES}$ PROTECTIVE CASING I.D.
- SURFACE SEAL TYPE Concrete Cement
- 2.0 BOREHOLE DIAMETER
- RISER PIPE:

а. Туре	Schedule 40 F	PVC
b. I.D	2.0	INCHES
c. Length _	16.0	FEET

- d. Joint Type Flush Threaded
- 5. BACKFILL:

Crushed Bentonite Poured

- **Grout Barrier** 6. TYPE OF SEAL
- SCREEN:

Schedule 40 PVC a. Type

INCHES

0.01 c. Slot Size **INCHES**

10.0 d. Length **FEET**

- #4 Sand SCREEN FILTER TYPE
- BACKFILL TYPE Natural Cave / Poured Sand

9/1/11 DATE COMPLETED DEVELOPMENT METHOD Submersible Pump

Earth Exploration DRILLING CONTRACTOR **Doug Carlson** DRILLER

RIG TYPE Geoprobe 6620

WELL CONSTRUCTION DIAGRAM

Michigan Plaza / Michigan Apts. Indianapolis, Indiana

Project Number: M01046 Drawing File: MWW-P-12S Construction Diagram

Date Prepared: 12/15/11

Not to Scale

Approved By: JAM Drn. By: ABW





Boring/Well ID:	MMW-P-13D
CLIENT: AIMCO	FIELD SCIENTIST: Sarah Webb, L. P. G.
PROJECT LOCATION: Indianapolis, Indiana	DATE BEGAN: 8/31/11
PROJECT NAME: Michigan Meadows Apts	DATE FINISHED: 8/31/11
PROJECT NUMBER: M01046	DRILLING METHOD: Direct Push
DRILLING CONTRACTOR: Earth Exploration	DRILLING EQUIPMENT: Geoprobe 6620
DRILLER: Doug Carlson	GW DEPTH (OBSERVED): 20.0 ft
BORING LOCATION: W of Michigan Plaza	SURFACE ELEVATION: NS
	SHEET 1 OF 2

	BORING LOCATION: W of Michigan Plaza			SU	SURFACE ELEVATION: NS					
							SHEET 1 OF			
Depth BGS (ft)	USCS Symbol	USCS Graphic	Lit	hologic Description	Stratum Depth (ft)	TPV (ppm)	Recovery %	Sample Location	Sample ID	MMW-P-13D
0-			Grass/Topsoil				1	1		2" Dia. Borehole
1-				n trace gravel, brown (10YR 5/3),	0.5	0.8				
3-	SM		Fine to medium S	SAND, loose 2.5 to 3 ft		0.8	75			
			No Recovery 3 to	4 ft		-				
5-			SAND and GRAV 5/3), loose, dry	EL, Well Graded, brown (10YR	4.0	0.9				
6-						-	50			
7-			No Recovery 6 to	8 ft		-				
9-	SW-GW					1.0				
10-						1.0	75			— Bentonite Seal
12-			No Recovery 11 t	o 12 ft		-				- —2" PVC Riser
13-				(R 5/8) oxidation 12 to 13.5 ft	13.	0.9				
14-			SAND with trace 5/3), loose, moist	gravel, Well Graded, brown (10YR			75			
15-	SW		No Recovery 15 t			1.2				
16-						-	+	-		
17-			011.7		17.	0.7		*	Soil Sample SBP13D:160180	
18-	ML			ND with trace coarse sand and YR 5/3), dense, moist	18.	\vdash	75			
19-	SW		Fine to medium S (10YR 5/3), dense	SAND with trace gravel, brown e	_	1.2				
20-			No Recovery 19 t	to 20 ft]		

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Boring/Well ID:	MMW-P-13D
CLIENT: AIMCO	FIELD SCIENTIST: Sarah Webb, L. P. G.
PROJECT LOCATION: Indianapolis, Indiana	DATE BEGAN: 8/31/11
PROJECT NAME: Michigan Meadows Apts	DATE FINISHED: 8/31/11
PROJECT NUMBER: M01046	DRILLING METHOD: Direct Push
DRILLING CONTRACTOR: Earth Exploration	DRILLING EQUIPMENT: Geoprobe 6620
DRILLER: Doug Carlson	GW DEPTH (OBSERVED): 20.0 ft
BORING LOCATION: W of Michigan Plaza	SURFACE ELEVATION: NS
	SHEET 2 OF 2

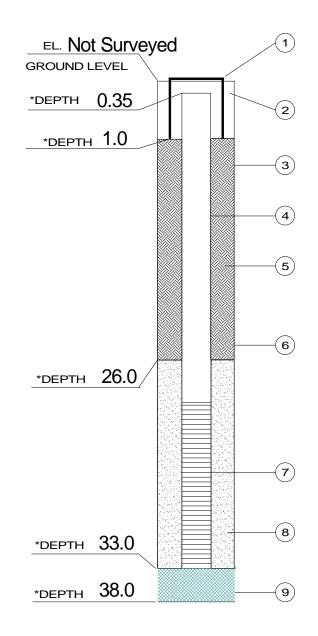
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Depth BGS (ft)	USCS Symbol	USCS Graphic	Lithologic Description	Stratum Depth (ft)	TPV (ppm)	Recovery %	Sample Location	Sample ID	MMW-P-13D
20-			Coarse SAND and GRAVEL, brown (10YR 5/3),	20.0]		▼ ■ ■
21-			dense, wet		1.3				
22-						75			
			Fine to medium SAND 22 to 22.5 ft		1.6	/3			
23-			No Docovery 22 to 24 ft		_				— Bentonite Seal
24-			No Recovery 23 to 24 ft		_		*	Water Sample SBP13D:240	
0.5			Fine SAND 24 to 25 ft					SBP13D:240	
25 —					1.2				- —2" PVC Riser
26-	0144 0144					50			Z FVC Risei
27-	SW-GW		No Recovery 26 to 28 ft		_				
			,						
28-					3.1				
29-			Color change to brownish gray (10YR 6/2) 28 to						Sand Pack
30-			30.5 ft		2.5	63			
31 —			No Recovery 30.5 to 32 ft		-				
32-							*	Water Sample SBP13D:320	Screen
33-			Color change to gray (2.5Y 5/1) 32 to 33 ft	33.0	2.5			3BP 13D.320	(2" Slotted PVC)
			SILTY CLAY, gray (2.5Y 5/1), hard, dry	33.0					
34-					1.3	75			
35-									
26	CL		No recovery 35 to 36 ft						
36-									
37-					1.8	100	*	Soil Sample SBP13D:360380	
38-			End of boring at 38 ft	38.0					
20.			End of boiling at 50 it						
39-									
40 —									

BGS = Below Ground Surface

USCS = Unified Soil Classification System

TPV = Total Photoionizable Vapors

WELL CONSTRUCTION DIAGRAM WELL NO. MMW-P-13D



*DEPTH IN FEET BELOW GROUND LEVEL

GEOLOGIST/FIELD SCIENTIST
Sarah Webb, L.P.G.

- 1. PROTECTIVE CASING I.D. 8.0 INCHES
- 2. SURFACE SEAL TYPE Concrete Cement
- 3. BOREHOLE DIAMETER 2.0 INCHES
- 4. RISER PIPE:

а. Туре	Schedule 40	PVC
b. I.D	2.0	INCHES
c. Length _	28.0	FEET

- d. Joint Type Flush Threaded
- 5. BACKFILL:

a. Type <u>Crushed Bentonite</u>
b. Installation Poured

b. Installation Poured

6. TYPE OF SEAL Grout Barrier

7. SCREEN:

a. Type Schedule 40 PVC

b. I.D. <u>2.0</u> INCHES

c. Slot Size <u>0.01</u> INCHES

d. Length 5.0 FEET

- B. SCREEN FILTER TYPE #4 Sand
- 9. BACKFILL TYPE Natural Cave / Poured Sand

DATE COMPLETED 8/31/11

DEVELOPMENT METHOD Submersible Pump

DRILLING CONTRACTOR Earth Exploration

DRILLER Doug Carlson

RIG TYPE Geoprobe 6620

WELL CONSTRUCTION DIAGRAM

Michigan Plaza / Michigan Apts. Indianapolis, Indiana Project Number: M01046

Drawing File: MWW-P-13D Construction Diagram

Date Prepared: 12/15/11

Scale: Not to Scale

Drn. By: Ckd. By: Approved By: JAM





Boring/Well ID:	MMW-P-13S
CLIENT: AIMCO	FIELD SCIENTIST: Sarah Webb, L. P. G.
PROJECT LOCATION: Indianapolis, Indiana	DATE BEGAN: 8/31/11
PROJECT NAME: Michigan Meadows Apts	DATE FINISHED: 8/31/11
PROJECT NUMBER: M01046	DRILLING METHOD: Direct Push
DRILLING CONTRACTOR: Earth Exploration	DRILLING EQUIPMENT: Geoprobe 6620
DRILLER: Doug Carlson	GW DEPTH (OBSERVED): 20.0 ft
BORING LOCATION: W of Michigan Plaza	SURFACE ELEVATION: NS
	SHEET 1 OF 1

	SHEELLOFT
Depth BGS (ft) USCS Symbol USCS Symbol USCS Graphic Stratum Depth (ft) TPV (ppm) Recovery % Sample Location Recovery %	MW-P-13S
0 Grass/Topsoil	2" Dia. Borehole
Grass/Topsoil SILTY SAND with trace gravel, brown (10YR 5/3), very dense Fine SAND at 2 ft No Recovery 2 to 4 ft	
SAND and GRAVEL, Well Graded, brown (10YR 4.0 0.6	
SAND and GRAVEL, Well Graded, brown (10YR 5/3), loose, dry 0.9 63	
7 - No Recovery 6.5 to 8 ft	
8- 9- 1.3 More dense 8 to 11 ft	—Bentonite Seal
10 – SW-GW	- —2" PVC Riser
11-	2 1 70 11001
No Recovery 11 to 12 ft	
Yellowish red (5YR 5/8) oxidation 12 to 13.5 ft	
14- 75 75	
15—	
No Recovery 15 to 16 ft	
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
18 — ML Yellowish red (5YR 5/8) oxidation at 17 ft	
19— (10YR 6/2), hard, moist	Sand Pack
Coarse SAND and GRAVEL, brown (10YR 5/3),	
21	
Wet helew 20 ft	
23 SW-GW No Recovery 23 to 24 ft	Screen
Fine SAND with trace coarse sand 24 to 25 ft	(2" Slotted PVC)
25 — Fine SAND with trace coarse sand 24 to 25 ft 2.3	
Fine SAND with trace coarse sand and gravel 25.5	
No Recovery 27.5 to 28 ft	
28 End of boring at 28 ft	

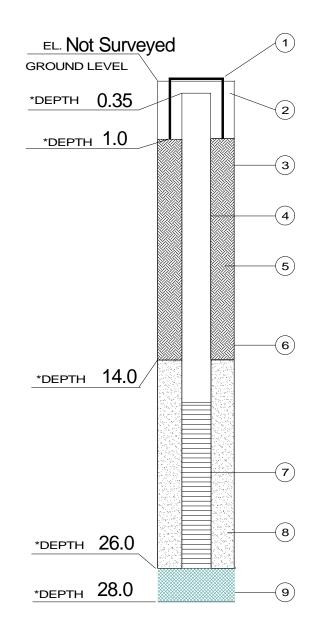
BGS = Below Ground Surface

USCS = Unified Soil Classification System

TPV = Total Photoionizable Vapors

WELL CONSTRUCTION DIAGRAM

WELL NO. MMW-P-13S



*DEPTH IN FEET BELOW GROUND LEVEL

GEOLOGIST/FIELD SCIENTIST
Sarah Webb, L.P.G.

- 1. PROTECTIVE CASING I.D. 8.0 INCHES
- 2. SURFACE SEAL TYPE Concrete Cement
- 3. BOREHOLE DIAMETER 2.0 INCHES
- 4. RISER PIPE:
 - a. Type Schedule 40 PVC
 b. I.D. 2.0 INCHES
 c. Length ______ 16.0 FEET
 - d. Joint Type Flush Threaded
- 5. BACKFILL:
 - a. Type Crushed Bentonite
 - b. Installation Poured
- 6. TYPE OF SEAL Grout Barrier
- 7. SCREEN:
 - a. Type Schedule 40 PVC
 - b. I.D. <u>2.0</u> INCHES
 - c. Slot Size <u>0.01</u> INCHES
 - d. Length ______FEET
- 8. SCREEN FILTER TYPE #4 Sand
- 9. BACKFILL TYPE Natural Cave / Poured Sand

DATE COMPLETED 8/31/11

DEVELOPMENT METHOD Submersible Pump

DRILLING CONTRACTOR Earth Exploration

Doug Carlson
Geoprobe 6620

WELL CONSTRUCTION DIAGRAM

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